

**What is claimed is:**

1. A method for determining a recording power of a radiation beam for recording information onto a recording medium operated at a user-desired speed, multiple of test speeds being previously provided with, said method comprising the steps of:

(a) under operation of the test speeds in turn, determining an optimum recording power corresponding to the test speed being operated, respectively;

(b) fitting the corresponding optimum recording powers versus of the test speeds to generate a function of speed; and

(c) calculating said recording power by applying said user-desired speed in said function of speed.

2. The method of claim 1, between step (b) and step (c), further comprising the step of:

(b1) judging if the user-desired is equal to anyone of the test speeds, and if NO, performing step (c).

3. The method of claim 2, wherein the user-desired speed is faster than all of the test speeds.

4. The method of claim 2, if YES in step (b1), further comprising the step of:

(b2) determining the optimum recording power, whose corresponding test speed is equal to said user-desired speed, as said recording power for said use-desired speed, and not performing step (c).

5. The method of claim 4, wherein step (a) is performed, under operation of the

multiple of test speeds, respectively, by the steps of:

- (a1) recording information onto the recording medium while varying a current recording power;
- (a2) receiving the radiation beam reflected from the recording medium during step (a1);
- (a3) analyzing the reflected radiation beam to estimate effect of recording information under operation of the test speed being operated; and
- (a4) repeating steps (a1) through (a3) until the optimum recording power corresponding to the test speed being operated is determined.
6. The method claim 5, wherein said function of speed is a polynomial function of at least two orders.
7. The method of claim 5, wherein said function of speed is an exponential function.
8. The method claim 5, wherein said function of speed is generated by a function of speed built in an application.
9. An information recording/reproducing apparatus capable of determining a recording power of a radiation beam for recording information onto a recording medium operated at a user-desired speed, said apparatus being previously operated at multiple of test speeds in turn, said apparatus comprising:
- a recording processing device comprising a radiation generating circuit for recording information onto the recording medium while varying a current recording power;
- a retrieving processing device comprising a radiation detector for receiving the radiation beam reflected from the recording medium during recording of information;

5 a controller, connected to said recording processing device and said  
retrieving processing device, for analyzing the reflected radiation beam to  
estimate effect of recording information under operation of the test speed  
being operated until an optimum recording power corresponding to the  
test speed being operated is determined, and then for fitting the  
corresponding optimum recording powers versus the test speeds to  
generate a function of speed; and

10 a determining device, connected to said controller, for receiving input of said  
user-desired speed, and for calculating said recording power by applying  
said user-desired speed in said function of speed.

10. The information recording/reproducing apparatus of claim 9, wherein the user-  
desired speed is faster than all of the test speeds.
11. The information recording/reproducing apparatus of claim 9, wherein the  
determining device also functions judging whether said user-desired speed is  
15 equal to anyone of the test speed, and if YES, the determining device functions  
determining the optimum recording power, whose corresponding test speed is  
equal to said user-desired speed, as said recording power for said user-desired  
speed in place of calculating said recording power by applying said user-desired  
speed in said function of speed.
12. The information recording/reproducing apparatus of claim 11, wherein said  
20 function of speed is a polynomial function of at least two orders.
13. The information recording/reproducing apparatus of claim 11, wherein said  
function of speed is an exponential function.
14. The information recording/reproducing apparatus of claim 11, wherein said  
25 function of speed is generated by a function of speed built in an application.